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An Instrument for Indicating the Hardening Temperature of Steel

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An Instrument for Indicating the Hardening Temperature of Steel. By the Hon. C. W. Stopford *and* C. R. Darling.

(Exhibited at the Meeting on January 23, 1920.)

The instrument depends upon the fact that the best results are secured by quenching steel at a temperature just above that at which it demagnetises, and is used in conjunction with an electric resistance furnace with inductive winding. A pivoted soft-iron rod is surrounded by a coil joined in series with the furnace winding. The deflection of the iron rod in either direction moves an upright spring, and breaks the circuit of a bell or buzzer. In using, the instrument is placed near the furnace, and when the current is switched on the pointer deflects and breaks the bell circuit. By a screw movement the springs are restored to such a position that the bell just rings. On placing the steel articles in the furnace the increased flux causes the bell circuit to be broken; but on demagnetising, the pivoted iron rod comes back to its original position, causing the bell to ring. The indicator may be used with either direct or alternating current, and responds when only a small charge of steel is placed in the furnace.